(c) All plates must have their heat number and the name or brand of the manufacturer legibly stamped on them at the rolling mill.

[Amdt. 179–10, 36 FR 21355, Nov. 6, 1971, as amended by Amdt. 179–42, 54 FR 38798, Sept. 20, 1989; Amdt. 179–43, 55 FR 27642, July 5, 1990; Amdt. 179–52, 61 FR 28682, June 5, 1996; Amdt. 179–52, 61 FR 50255, Sept. 25, 1996; Amdt. 179–53, 61 FR 51342, Oct. 1, 1996; 68 FR 75763, Dec. 31, 2003]

§ 179.300–8 Tank heads.

(a) Class DOT-110A tanks shall have fusion-welded heads formed concave to pressure. Heads for fusion welding shall be an ellipsoid of revolution 2:1 ratio of major to minor axis. They shall be one piece, hot formed in one heat so as to provide a straight flange at least 1½ inches long. The thickness shall not be less than that calculated by the following formula:

$$t = \frac{Pd}{2SE}$$

where symbols are as defined in § 179.300–6(a).

(b) Class DOT-106A tanks must have forged-welded heads, formed convex to pressure. Heads for forge welding must be torispherical with an inside radius not greater than the inside diameter of the shell. They must be one piece, hot formed in one heat so as to provide a straight flange at least 4 inches long. They must have snug drive fit into the shell for forge welding. The wall thickness after forming must be sufficient to meet the test requirements of § 179.300–16 and to provide for adequate threading of openings.

[29 FR 18995, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967, and amended by Amdt. 179–10, 36 FR 21355, Nov. 6, 1971]

§ 179.300–9 Welding.

(a) Longitudinal joints must be fusion welded. Head-to-shell joints must be forge welded on class DOT-106A tanks and fusion welded on class DOT-110A tanks. Welding procedures, welders and fabricators must be approved in accordance with AAR Specifications for Tank Cars, appendix W (IBR, see § 171.7 of this subchapter).

(b) Fusion-welded joints must be in compliance with the requirements of AAR Specifications for Tank Cars, appendix W, except that circumferential welds in tanks less than 36 inches inside diameter need not be radiotaped.

(c) Forge-welded joints shall be thoroughly hammered or rolled to insure sound welds. The flanges of the heads shall be forge lapwelded to the shell and then crimped inwardly toward the center line at least one inch on the radius. Welding and crimping must be accomplished in one heat.

[29 FR 18995, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967, and as amended by Amdt. 179–10, 36 FR 21355, Nov. 6, 1971; 68 FR 75763, Dec. 31, 2003]

§ 179.300–10 Postweld heat treatment.

After welding is complete, steel tanks and all attachments welded thereto, must be postweld heat treated as a unit in compliance with the requirements of AAR Specifications for Tank Cars, appendix W (IBR, see § 171.7 of this subchapter).

[68 FR 75763, Dec. 31, 2003]

§ 179.300–12 Protection of fittings.

(a) Tanks shall be of such design as will afford maximum protection to any fittings or attachment to the head including the housing referred to in § 179.300–12(b). Tank ends shall slope or curve inward toward the axis so that the diameter at each end is at least 2 inches less than the maximum diameter.

(b) Loading and unloading valves shall be protected by a detachable protective housing of approved design which shall not project beyond the end of the tank and shall be securely fastened to the tank head. Pressure relief devices shall not be covered by the housing.

[29 FR 18995, Dec. 29, 1964, as amended at 68 FR 57634, Oct. 6, 2003]

§ 179.300–13 Venting, loading and unloading valves.

(a) Valves shall be of approved type, made of metal not subject to rapid deterioration by lading, and shall withstand tank test pressure without leakage. The valves shall be screwed directly into or attached by other approved methods to one tank head. Provision shall be made for closing outlet connections of the valves.